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(58) Field of search
D1B B2F

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(54) Improving the lightfastness of dyeings obtained with acid dyes or metal complex dyes on polyamides

(57) The lightfastness of dyeings obtained with acid dyes and/or metal complex dyes on polyamide textile material is improved by treating them with a copper hydroxamate before, during or after dyeing.

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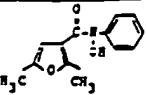
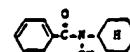
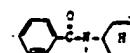
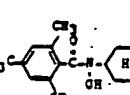
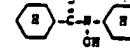
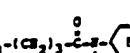
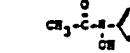
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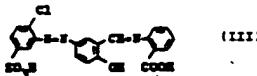
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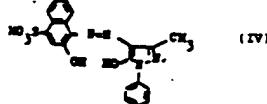
	TABLE	Parts of potassium hydroxamate	Parts of copper hydroxamate	Melting point °C
b) 26.94		23.3	65-67	
c) 23.74		23.0	122-125	
d) 27.14		24.0	132-134	
e) 29.55		23.1	223-240	
f) 26.34		22.4	109-112	
g) 23.74		19.1	102-105	
h) 18.93		16.0	204-206	

Example 1

100 parts of a polyamide yarn are dyed in a bath which contains 200 parts of water, 0.7 part of the yellow dye of the formula



5 in the form of the 1:2 chromium complex, 0.3 part of the reddish violet dye of the formula



also in the form of the 1:2 chromium complex, 0.5 part of the reaction product of 1 mole of oleylamine with 12 moles of ethylene oxide, and 0.1 part of the copper complex defined under a) above. The pH of the bath is set to 5.0 by adding acetic acid, and the polyamide yarn is dyed for 60 minutes at the boil. It is then rinsed thoroughly. An orange brown dyeing is obtained, which has markedly improved lightfastness compared to a dyeing obtained without addition of compound a).

Example 2

100 parts of a polyamide fabric are dyed for 40 minutes at 115°C in an autoclave, using a bath, at pH 20.5, which contains 0.7 part of the yellow dye of the formula III as the 1:2 chromium complex, 0.3 part of the reddish violet dye of the formula IV as the 1:2 chromium complex and 0.5 part of the reaction

product of 1 mole of oleylamine with 12 moles of ethylene oxide. After dyeing, the fabric is rinsed, dried and subsequently impregnated, on a pad, with a bath containing 1 g of the copper complex a) per liter of water, the wet pick-up being 100% by weight. The fabric thus impregnated is dried and treated with hot air at 190°C for 20 seconds. An orange brown dyeing is obtained, the lightfastness of which is markedly improved over that of a dyeing which has not been after-treated.

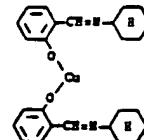
The further compounds b) to h) shown as Examples 35 in the Table give similar improvements in lightfastness to that achieved with copper complex a).

Example 3

The polyamide yarn mentioned in Example 1 is dyed at the boil in an aqueous bath, at pH 5.0, using 40 1%, based on yarn weight, of the copper phthalocyanine dye Color Index No. 74180, in the presence of 0.1% of copper complex (a). A brilliant deep blue dyeing is obtained.

Comparative Example 1

45 Example 3 is repeated, except that in place of the copper complex a) the copper complex of the formula

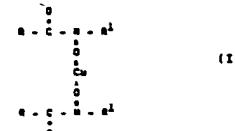


(according to German Laid-Open Application DOS 3,041,153, Example 1a) is used, in an amount of 0.1%. A turquoise dyeing is obtained, the hue being 50 markedly shifted toward green and dulled.

Claims

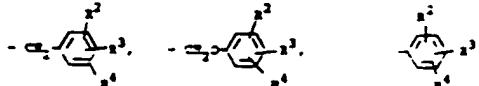
1. A process for improving the lightfastness of a dyeing obtained with an acid dye and/or metal complex dye on a polyamide textile material by 55 treating the textile material, before, during or after dyeing, with a copper complex, wherein a copper hydroxamate is employed as the copper complex.

2. A process as claimed in claim 1, wherein a copper hydroxamate is used which has the formula



60 where

R is C₁-C₁₂-alkyl, C₃-C₈-cycloalkyl which is unsubstituted or substituted by one or two alkyls of 1 to 4 carbon atoms,



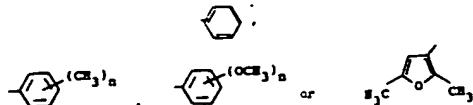
or substituted or unsubstituted furanyl, thiophenyl or 65 pyridinyl,

R², R³ and R⁴ being hydrogen, C₁-C₄-alkyl, methoxy or ethoxy, or one or two of the radicals R², R³ and R⁴ being chlorine or bromine, and R¹ is hydrogen, C₁-C₁₂-alkyl, C₃-C₈-cycloalkyl or



R⁵, R⁶ and R⁷ being hydrogen, C₁-C₄-alkyl or methoxy.

3. A process as claimed in claim 2, wherein a copper hydroxamate of formula I is employed, in which R is C₁-C₈alkyl, cyclohexyl,



5 n being 1-3, and

R¹ is methyl, cyclohexyl or phenyl.

4. A process as claimed in any of claims 1 to 3, wherein the copper hydroxamate is employed in an amount of 0.01-1% by weight, based on the textile

10 material.

5. A process as claimed in claim 3 or 4, wherein a copper hydroxamate hereinbefore identified as any of a) to h) is used.

6. A process for improving the lightfastness of a
15 dyeing obtained with an acid dye and/or a metal complex dye on a polyamide textile material, carried out substantially as described in any of the foregoing Examples 1 to 3.

7. Dyed polyamide textile material obtained by a
20 process as claimed in any of claims 1 to 6.

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